

## SPECIES PROFILE

# Ribbon Snake

*Thamnophis sauritus*

Federal Listing: Not listed

State Listing: Not listed

Global Rank: G5

State Rank: S5

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## ELEMENT 1: DISTRIBUTION AND HABITAT

### 1.1 Habitat Description

The common ribbon snake is a slender, semi-aquatic snake often observed near the edges of emergent marshes, wet meadows, scrub-shrub wetlands, beaver impoundments, bogs, river and stream floodplains, and vegetated shorelines of ponds and lakes (Ernst and Ernst 2003, M. Marchand personal observation). Ribbon snakes generally avoid deep water but will swim readily along the surface. Juveniles and gravid females may use uplands (Smith 2002), but the extent of use is not well established. Most ribbon snakes documented in New England have been found below 305 m (1,000 ft) elevation (Oliver and Bailey 1939, Klemens 1993).

Possible hibernacula include muskrat (*Ondatra zibethica*) bank burrows and lodges (Ernst and Ernst 2003), ant mounds, mammal tunnels, and rock crevices (Carpenter 1953, Hansknecht et al. 1999). Though ribbon snakes eat primarily amphibians (Carpenter 1952), they will also consume lesser amounts of mice, spiders, small fish, and insects.

### 1.2 Justification

The common ribbon snake was listed as a species of conservation concern in the northeastern United States due to a lack of data and a suspected decline (Therres 1999). The species is near the northern limit of its range in New England and is listed as a species

of special concern in Maine, Vermont, Connecticut and Rhode Island because of uncommon and localized populations that appear to have declined (Klemens 1993). Ribbon snakes could be used as indicator species (e.g., for contaminants) because of their dependence on amphibians as prey and use of both aquatic and upland habitats (Smith 2002). Also, ribbon snake occupation may indicate high quality wetland habitat that could support other species of conservation concern such as spotted turtle (*Clemmys guttata*), leopard frog (*Rana pipiens*), and blue-spotted (*Ambystoma laterale*) and four-toed salamanders (*Hemidactylium scutatum*) (Klemens 1993).

### 1.3 Protection and Regulatory Status

No special protection in New Hampshire.

### 1.4 Population and Habitat Distribution

Ribbon snakes occur east of the Mississippi River from southern Ontario and southern Maine to southeastern Louisiana and the Florida Keys, with isolated records from Nova Scotia (Ernst and Ernst 2003). Two subspecies, the eastern ribbon snake (*T. sauritus sauritus*) and the northern ribbon snake (*T. sauritus septentrionalis*) may occur in New England (Conant and Collins 1998). The range of the northern ribbon snake includes Nova Scotia and extends from southern Maine westward through New Hampshire, Vermont, and New York. The northern limit of the eastern ribbon snake includes the southern parts of Vermont, New Hampshire, and Maine (Conant and Collins 1998). Most Maine records are from York County, and no distinction was made between the two ribbon snake subspecies (Hunter et al. 1999).

In New Hampshire, the majority of records are from the south. County records of ribbon snakes include Carroll, Cheshire, Hillsborough, Merrimack,

and Sullivan (Oliver and Bailey 1939). A 1920 record from Sanbornton (Museum of Comparative Zoology Herpetology Collection at Harvard) is the only documented record for Belknap County.

Recent unverified reports from Sanbornton and New Hampton (Belknap County) suggest the need for further documentation. Recent verified observations of ribbon snakes include Groton (Grafton County), Rindge (Cheshire County), Amherst, Weare, and Lyndeborough (Hillsborough County), Pittsfield, Bradford, Hooksett, Allenstown (Merrimack County), New Durham, Lee, Rochester, Strafford, and Durham (Strafford County), and Portsmouth, Auburn, Raymond, and Nottingham (Rockingham County). There are no confirmed records of the ribbon snake in Coos County.

### 1.5 Town Distribution Map

### 1.6 Habitat Map

See Marsh and Shrub Wetlands map.

### 1.7 Sources of Information

Status and ranking information was taken from NatureServe (2005). New Hampshire RAARP records and Taylor (1993) were the primary source of locality records. Online museum collection databases (Museum of Comparative Zoology, Harvard and Yale Peabody Museum) were searched for historical records. Habitat and life history information was taken from published literature.

### 1.8 Extent and Quality of Data

The distribution, habitat use, and condition of ribbon snake populations in New Hampshire are not well understood. This assessment was limited to those records that were included in museum collections, were found in scientific reports, were reported to RAARP by a trained expert, or that included a specimen or clear photograph. Trained observers will likely result in many new town records.

### 1.9 Distribution Research

Encourage RAARP volunteers to identify and report ribbon snake locations, especially in those areas where

records are scarce (e.g. Belknap, Carroll, Grafton, and Sullivan counties). Systematic surveys and research are needed to provide more information regarding the condition and habitat requirements of populations. Ribbon snakes, and other rare reptiles and amphibians, should be incorporated into habitat inventories and management and restoration efforts.

### ELEMENT 3: THREAT ASSESSMENT

Wetland loss and degradation and shoreline modification are the greatest threats to ribbon snakes. See Threats in Marsh and Shrub Wetlands habitat profile.

### ELEMENT 4: CONSERVATION STRATEGIES

See Marsh and Shrub Wetlands habitat type for relevant conservation strategies.

### ELEMENT 5: REFERENCES

#### 5.1 Literature

- Carpenter, C.C. 1952. Comparative ecology of the common garter snake (*Thamnophis s. sitalis*), the ribbon snake (*Thamnophis s. sauritus*), and Butler's garter snake (*Thamnophis butleri*) in mixed populations. *Ecological Monographs* 22:236-258.
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- Conant, R., and J.T. Collins. 1998. *Reptiles and amphibians: Eastern and central North America* (3<sup>rd</sup> edition). Houghton Mifflin, Boston, Massachusetts, USA.
- Ernst, C.H., and E.M. Ernst. 2003. *Snakes of the United States and Canada*. The Smithsonian Institution. Washington, D.C., USA and London, England.
- Hansknecht, K.A., T.R. Creque, and C.H. Ernst. 1999. *Thamnophis sauritus sauritus*. Hibernaculum. *Herpetological Review* 30:104.
- Klemens, M.W. 1993. Amphibians and reptiles of Connecticut and adjacent regions. State Geological and Natural History Survey of Connecticut. Bulletin No.112. Connecticut Department of Environmental Protection, Hartford, Connecticut, USA.
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- encyclopedia of life [web application]. Version 4.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. Accessed 2005 February 4.
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- Smith, K. 2002. COSEWIC status report on the eastern ribbonsnake *Thamnophis sauritus* in Canada, in COSEWIC assessment and status report on the eastern ribbonsnake *Thamnophis sauritus*. Committee on the Status of Endangered Wildlife in Canada. Ottawa.
- Taylor, J. 1993. The Amphibians and Reptiles of New Hampshire. Nongame and Endangered Wildlife Program. New Hampshire Fish and Game Department. Concord, New Hampshire, USA.
- Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. *Northeast Wildlife* 54:93-100.

## 5.2 Data Sources

New Hampshire Reptile and Amphibian Reporting Program (RAARP) database. Maintained by the New Hampshire Fish and Game, Nongame and Endangered Species Program, Concord New Hampshire. Accessed 2005 February 14.

## Distribution of Ribbon Snake in New Hampshire

### Distribution

- Known
- Historic



Known = verified observation based on specimens, photos, or expert observation (e.g., NHPG's Reptile & Amphibian Reporting Program (RAARP), museum specimens, etc.)  
Historic = observations more than 20 years old

